CLAIMS:

Claims 1-186. (Canceled)

187. (New) A method for promoting wound repair and regeneration in a subject in need of such treatment comprising administering to the subject a wound-repairing effective amount of a composition which comprises thymosin beta (TB) 4 or a TB4 isoform that comprises LKKTET (SEQ ID NO:1),

wherein said composition has actin-sequestering or actin-binding activity, stimulates epithelial migration, stimulates wound healing, and promotes wound repair.

188. (New) The method of claim 187, wherein said wound-repairing polypeptide is TB4.

189. (New) The method of claim 187, wherein said TB4 isoform is at least 70% homologous to SEQ ID NO:2.

190. (New) The method of claim 187, wherein said TB4 isoform is selected from the group consisting of TB4ala, TB9, TB10, TB11, TB12, TB13, and TB14.

191. (New) The method of claim 187, wherein said polypeptide is recombinant or synthetic.

192. (New) The method of claim 187, wherein said administering to said subject is by a route selected from the group consisting of injection, local injection, catheter, surgically, topically, aerosol, inhalation, systemically, orally, intranasally, intravenously, intraperitoneally, intramuscularly, intracavity administration and transdermally.

193. (New) The method of claim 187, wherein said composition further comprises a carrier for systemic administration.

194. (New) The method of claim 187, wherein said carrier is selected from the group consisting of saline, sterile water, a sodium chloride solution, lactated Ringer's intravenous, Ringer's dextrose, dextrose and sodium chloride, polyethylene glycol, vegetable oil, hydrogenated naphthalene, lactide polymer, lactide/glycolide copolymer, polyoxethylene-polyoxypropylene, polyoxyethylene-9-lauryl ether, glycocholate and deoxycholate, phosphatidyl, phosphatidylglycerol, phosphatidylcholine, phosphatidylserine, phosphatidylethanolamine, sphingolipids, cerebrosides, gangliosides; dipalmitoylphosphatidylcholine, distearoylphosphatidyl-choline, injectable organic ester, ethyl oleate, an alcoholic/aqueous solution, an alcoholic/aqueous emulsion, an alcoholic/aqueous suspension.

195. (New) The method of claim 187, wherein said composition further comprises a carrier for topical administration.

196. (New) The method of claim 195, wherein said carrier is selected from the group consisting of a gel, a cream, a paste, a lotion, a spray, a suspension, a dispersion, a salve, a hydrogel and an ointment.

197. (New) The method of claim 187, wherein said composition further comprises a polypeptide selected from the group consisting of gelsolin, vitamin D binding protein, profilin, cofilin, depactin, DNaseI, vilin, fragmin, severin, capping protein, beta-actinin, and acumentin.

198. (New) The method of claim 187, wherein said composition further comprises an agent that stimulates the production of TB4.

199. (New) The method of claim 198, wherein said agent that stimulates the production of TB4 is transforming growth factor beta (TGF-b).

200. (New) The method of claim 187, which further comprises contacting the site of the wound with an agent which promotes wound healing.

201. (New) The method of claim 200, wherein said agent is selected from the group consisting of IGF, IGF-I, IGF-2, IL-I, PDGF, FGF, KGF, VEGF, prothymosin α, thymosin α1 and combinations thereof.

202. (New) The method of claim 187, wherein said wound is in a tissue selected from the group consisting of a skin tissue, a dermal tissue, an epidermal tissue, an eye tissue, a cornea, a retina, a uro-genital tissue, a gastro-intestinal tissue, a cardiovascular tissue, a muscle tissue, a connective tissue, a neural tissue, a bone tissue, a cartilage tissue, a breast tissue, a central nervous system tissue, a pancreatic tissue, a liver tissue, a reticulo-endothelial system tissue and an endometrial tissue.

203. (New) The method of claim 187, wherein said wound is present in a disease or condition selected from the group consisting of an arthritis, osteoporosis, a musculo-skeletal disorder, a burn, an ulcer or ulceration, a pressure ulcer, a diabetic ulcer, a skin lesion, a skin disease, a neurological disease, a neurodegenerative disease, a nerve disease, a bone disease, a heart disease, an eye disease, corneal damage, retinal damage, skin damage, a cardiovascular disease, ischemia, atherosclerosis, a fibrotic disorder, a sclerotic disorder, a cancer and a cell proliferative disorder.

204. (New) A method for promoting wound repair and regeneration in a subject in need of such treatment comprising administering to the subject a wound-repairing effective amount of a composition which comprises thymosin beta (TB) 4, a TB4 isoform that comprises LKKTET (SEQ ID NO:1) or a TB4 isoform that comprises LKKTET (SEQ ID NO:1) in which a hydrophobic amino acid residue is replaced with another hydrophobic amino acid residue or a polar amino acid residue is replaced with another polar amino acid residue, or both,

wherein said TB4 or TB4 isoform has actin-sequestering or actin-binding activity, stimulates epithelial migration, stimulates wound healing, and promotes wound repair.

205. (New) The method of claim 204, wherein said wound-repairing polypeptide is TB4.

206. (New) The method of claim 204, wherein said TB4 isoform is at least 70% homologous to SEQ ID NO:2.

207. (New) The method of claim 204, wherein said TB4 isoform is selected from the group consisting of TB4ala, TB9, TB10, TB11, TB12, TB13, and TB14.

208. (New) The method of claim 204, wherein said polypeptide is recombinant or synthetic.

209. (New) The method of claim 204, wherein said administering to said subject is by a route selected from the group consisting of injection, local injection, catheter, surgically, topically, aerosol, inhalation, systemically, orally, intranasally, intravenously, intraperitoneally, intramuscularly, intracavity administration and transdermally.

210. (New) The method of claim 204, wherein said composition further comprises a carrier for systemic administration.

211. (New) The method of claim 210, wherein said carrier is selected from the group consisting of saline, sterile water, a sodium chloride solution, lactated Ringer's intravenous, Ringer's dextrose, dextrose and sodium chloride, polyethylene glycol, vegetable oil, hydrogenated naphthalene, lactide polymer, lactide/glycolide copolymer, polyoxethylene-polyoxypropylene, polyoxyethylene-9-lauryl ether, glycocholate and deoxycholate, phosphatidyl, phosphatidylglycerol, phosphatidylcholine, phosphatidylserine, phosphatidylethanolamine, sphingolipids, cerebrosides, gangliosides; dipalmitoylphosphatidylcholine, distearoylphosphatidyl-choline, injectable organic ester, ethyl oleate, an alcoholic/aqueous solution, an alcoholic/aqueous emulsion, an alcoholic/aqueous suspension.

212. (New) The method of claim 204, wherein said composition further comprises a carrier for topical administration.

213. (New) The method of claim 212, wherein said carrier is selected from the group consisting of a gel, a cream, a paste, a lotion, a spray, a suspension, a dispersion, a salve, a hydrogel and an ointment.

214. (New) The method of claim 204, wherein said composition further comprises a polypeptide selected from the group consisting of gelsolin, vitamin D binding protein, profilin, cofilin, depactin, DNaseI, vilin, fragmin, severin, capping protein, beta-actinin, and acumentin.

215. (New) The method of claim 204, wherein said composition further comprises an agent that stimulates the production of TB4.

216. (New) The method of claim 215, wherein said agent that stimulates the production of TB4 is TGF-b.

217. (New) The method of claim 204, which further comprises contacting the site of the wound with an agent which promotes wound healing.

218. (New) The method of claim 217, wherein said agent is selected from the group consisting of IGF, IGF-I, IGF-2, IL-I, PDGF, FGF, KGF, VEGF, prothymosin α, thymosin α1 and combinations thereof.

219. (New) The method of claim 204, wherein said wound is in a tissue selected from the group consisting of a skin tissue, a dermal tissue, an epidermal tissue, an eye tissue, a cornea, a retina, a uro-genital tissue, a gastro-intestinal tissue, a cardiovascular tissue, a muscle tissue, a connective tissue, a neural tissue, a bone tissue, a cartilage tissue, a breast tissue, a central nervous system tissue, a pancreatic tissue, a liver tissue, a reticulo-endothelial system tissue and an endometrial tissue.

220. (New) The method of claim 219, wherein said tissue is selected from the group consisting of epidermal tissue, eye tissue, uro-genital tissue, gastro-intestinal tissue, cardiovascular tissue, muscle tissue, connective tissue, and neural tissue.

221. (New) The method of claim 219, wherein said tissue is skin tissue.

222. (New/Withdrawn) The method of claim 219, wherein said tissue is eye tissue.

223. (New) The method of claim 204, wherein said wound is present in a disease or condition selected from the group consisting of an arthritis, osteoporosis, a musculo-skeletal disorder, a burn, an ulcer or ulceration, a pressure ulcer, a diabetic ulcer, a skin lesion, a skin disease, a neurological disease, a neurodegenerative disease, a nerve disease, a bone disease, a heart disease, an eye disease, corneal damage, retinal damage, skin damage, a cardiovascular disease, ischemia, atherosclerosis, a fibrotic disorder, a sclerotic disorder, a cancer and a cell proliferative disorder.

224. (New) A method for promoting wound repair and regeneration in a tissue in a subject in need thereof comprising contacting said tissue with a therapeutically effective amount of a composition which comprises a polypeptide selected from the group consisting of:

a polypeptide comprising the amino acid sequence LKKTET (SEQ ID NO: 1),

a polypeptide comprising the amino acid sequence LKKTET (SEQ ID NO:1) in which a hydrophobic amino acid residue is replaced with another hydrophobic amino acid residue or a polar amino acid residue is replaced with another polar amino acid residue,

TB4,

a TB4 isoform that comprises LKKTET (SEQ ID NO:1),

a TB4 isoform that comprises LKKTET (SEQ ID NO:1) in which a hydrophobic amino acid residue is replaced with another hydrophobic amino and residue or a polar amino acid residue is replaced with another polar amino acid residue or both,

TB4ala, TB9, TB10, TB11, TB12, TB13, TB14,
wherein said polypeptide has actin-sequestering or actin-binding activity, stimulates epithelial migration, stimulates wound healing, and promotes wound repair.

225. (New) The method of claim 224, wherein said polypeptide is TB4.

226. (New) The method of claim 224, wherein said contacting is *in vivo* in a subject.

227. (New) The method of claim 224, wherein said contacting is *ex vivo.*

228. (New) The method of claim 224, wherein said subject is a mammal.

229. (New) The method of claim 224, wherein said mammal is human.

230. (New) The method of claim 224, wherein said composition further comprises a polypeptide selected from the group consisting of gelsolin, vitamin D binding protein, profilin, cofilin, depactin, DNaseI, vilin, fragmin, severin, capping protein, beta-actinin, and acumentin.

231. (New) The method of claim 224, wherein said composition further comprises an agent that stimulates the production of TB4.

232. (New) The method of claim 231, wherein said agent that stimulates the production of TB4 is TGF-b.

233. (New/Withdrawn) The method of claim 231, wherein said agent is a mineral.

234. (New/Withdrawn) The method of claim 233, wherein said mineral is zinc.

235. (New) The method of claim 224, wherein said contacting is topical administration to said tissue.

236. (New) The method of claim 224, wherein said composition further comprises a carrier for topical administration selected from the group consisting of a gel, a cream, a paste, a lotion, a spray, a suspension, a dispersion, a salve, a hydrogel and an ointment.